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DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT SURVEY REPORT -- SEASON OF 1946

SEQUOIA NATIONAL FOREST

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January 15, 1947

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By C. R. Struble

FOREST INSECT CONDITIONS IN 1945

Results of the bark beetle survey of the forest last year by J. M. Miller and Don J. Lewis showed general low activity throughout, except in areas north of Dunlap along McKenzie Ridge and in the vicinity of the 1943 Goat Corrall burn. This infestation was composed of single scattered trees and small groups killed by the western pine beetle, amounting to about 60 trees per section. The localized character of attacks and the close association with infestations within fire-injured trees indicated that unless strong overwintering broods were developed the infestations would soon die out. Hence, no control work was recommended here or in any other of the timbered areas on the forest. Within the burned area Miller estimated between 500 and 1,000 fire injured trees killed by summer infestations.

FIELD EXAMINATION 1946

The forest insect survey was made this year between October 22 and 25 by C. R. Struble of the Berkeley Laboratory, Bureau of Entomology and Plant Quarantine. This examination was facilitated for one day by Don J. Lewis of the Forest Service in the coverage of areas north of Dunlap, along the McKenzie Ridge, Pine Ridge, Indian Basin, and Tenmile Basin. All of the principal pine areas of the forest, accessible by road, were covered except the Mineral King area. Roadside plots, road counts, and general reconnaissance examinations were made at Camp Nelson, Kolby Meadow, Peppermint Creek, Parker Pass, and Greenhorn Summit. An examination was made also of heavy digger pine killing in the Kern River area in the vicinity of Fairview. The total cost of the survey amounted to approximately $100.00.

Current Insect Trends and Losses

Bark beetle losses over the forest in the principal timber zones except in localized areas in the northern part, were sustained at about the same low level as a year ago, with occasional single trees being killed. Current killing of fire injured ponderosa pines in the Goat Corrall burn area and along the edges was greatly diminished, and there was little evidence of continuing damage to surrounding unburned timber. In areas adjacent to and within General Grant big tree grove, mountain pine beetle infestations in sugar pine were above normal. Heaviest infestations in Forest Service timber were in the vicinity of Cherry Gap and Indian Basin. Continued heavy killing was sustained in the digger pine areas of the Kern River near Fairview.

Insects Involved in Current Kill

In ponderosa pine the western pine beetle, Dendroctonus brevicomis was the primary cause of the limited amount of killing this year. The pine engraver beetle, Ips confusus was a minor factor in top killing or pole killing. Infestations of the mountain pine beetle, D. monticolae were responsible for most of the increased killing of large sugar pines in General Grant Grove and vicinity, and minor group infestations in lodgepole at Big Meadows and Holby Meadow. The very limited killing in Jeffrey pine was caused by the Jeffrey pine beetle, D. jeffreyi and the flathead borer, Melanophila californica. The fir engraver beetle, Scolytus ventralis caused considerable limb killing in red fir near Big Meadows, and in combination with the Sierra fir borer, Tetropium abietis caused death to occasional scattered white fir trees generally in the fir type. In digger pine two insect species were found, but neither seemed to be the primary cause of killing; these were Ips latidens in the limbs, and flatheads, Melanophila sp in limbs and boles.

THE CONDITION BY AREAS

Goat Corrall burn

The current killing of fire injured ponderosa pines within the burn proper this year diminished to an estimated 125 trees as compared with between 500 and 1,000 killed a year ago. This rapid decline in activity is attributed to weakened broods which characteristically develop in fire-scorched trees. Little damage was evident in timber outside the burned area. A roadside count within a 440 acre area between Mt. Sampson and Dalilah Lookout, partly in burned and unburned timber, revealed only 9 currently killed trees.

Dunlap and McKenzie Ridge

South and east of Dunlap, including the Whittaker Forest and Eshom Valley infestations were very low, amounting to less than 5 trees per section. North and east of Dunlap, along McKenzie Ridge and in the vicinity of Pinehurst, infestations were much reduced from the condition reported last year. Near Pinehurst one small group of poles, killed presumably by Ips, was the only infestation found. Along the 135-acre roadside plot (RD-3) between the 5,000 and 6,000 contours on highway route 180 to General Grant Park there were 2 currently killed medium-sized sugar pines. Infestations over all in this area are estimated at less than 20 trees per section; this is about 1/3 the number of trees found a year ago.

Cherry Gap and Indian Basin

Current mountain pine beetle infestations in this area were above normal. The 56-acre roadside plot (RD-4) running between the park boundary and Cherry Gap revealed 3 large recently killed trees with an aggregate volume of 36,380 board feet. A count of recent fades and fading sugar pines in the Indian Basin area revealed 12 medium to large sugar pines

in approximately 400 acres. The overall infestation in the sugar pine-fir type of this area indicates a rate of between 20 and 30 trees per section.

Tennile Basin and Big Meadows

The Tennile creek basin and Hume Lake areas were relatively free from infestations. Reconnaissance counts from Buck Rock revealed 5 currently infested sugar pines in an area of about 9,000 acres. At Big Meadows minor mountain pine beetle infestations in lodgepole pine were noted.

Camp Nelson

The relatively low infestations here as reported by Miller last year were even lower this year. The 100-acre roadside plot between Cea and McIntyre creeks revealed no current loss as compared with 3 trees in 1945 and 5 trees in 1944. Reconnaissance counts in this area indicated less than 5 trees per section.

Holby Meadows

Mountain pine beetle attacks were continued in lodgepole pine adjacent to the 15 tree group reported here last year. An additional 20 trees was found to contain fresh pitch tubes. This indicates slightly increased aggressiveness, but there was no indication of new groupings within the area.

Upper Peppermint Creek and Dome Rock

No change in status was found from the condition current last year. The situation is decidedly endemic with less than 5 trees per section in this ponderosa pine-Jeffrey pine type.

Upper Kern-Lloyd Meadows

General viewing of the Jeffrey pine stands throughout this area indicated very low infestations.

Upper Deer Creek-Parker Pass

Very low infestations were found in the ponderosa pines west of Parker Pass. The roadside plot (RD-2) in this area revealed one currently killed and 3 overwintering (1945) trees in 84 acres, all within close proximity of a light burn toward the middle of this strip. This burn occurred about 1944, but subsequent insect losses were light.

Fairview-Springhill Recreational Area

The digger pine areas along the Kern River in this vicinity have been dying for the past several years. The conditions found this year are very serious with fading and red trees prevalent for a distance of several miles. While digger pine normally has little value commercially, its importance in this vicinity is the shade provided to camp ground and

resorts. The current dying of great numbers of trees of all sizes and ages threatens to eliminate shade and thereby ruin several of the camping and recreational spots along the Kern River.

The causes of dying are several, among which insects are believed to serve a minor role. Poor growing site, drought, and mistletoe appear to be basically responsible for trouble, and insects in many instances are hastening death. Two species of insects are predominant, an engraver beetle, Ips latidens in the branches, and a flathead, Melanophila sp. in the branches and main trunk. A great many of the flatheads are in the incipient larval stage in unhealthy trees which have not yet faded.

Greenhorn Summit

Low infestations amounting to less than 5 trees per section through this mixed conifer type were indicated from a general reconnaissance viewing of this area.

RECOMMENDATIONS

Areas Adjoining General Grant Grove

Control work in sugar pine by the fell-peel-burn method is recommended in the areas adjoining General Grant Grove. Special attention should be given in treating all infested trees lying north of the park in the vicinity of Cherry Gap, and in Indian Basin. Scattered infestations in the vicinity of Sequoia Lake and along state highway route 180 above the 5,000 foot contour should be treated. About 30 large infested trees are to be found in this area, and they may be treated at a cost approximating $600.00. With current logging activity in this vicinity there is a good chance of salvaging much of the downed material.

Fairview-Springhill Recreational Area

The evident secondary role of insects in the current killing of digger pines here precludes insect control work as a means of reducing the loss. The basic conditions responsible for current dying appear to be associated with poor growing site and drought, followed subsequently by mistletoe infection, then by insects. Until more is known about this problem, which is possible only through an investigation of the factors involved, there appears to be little that may be done about it. A general winter clean-up of the dead and dying trees may be recommended as good general sanitation and fire prevention practice, but not as insect control.